

WHAT IS CLAIMED IS:

1. A method for performing location analysis within a tracked device, comprising:

receiving, at the tracked device, a set of coordinates associated with a boundary area; and

obtaining, at the tracked device, a position of the tracked device;

determining, based upon the received coordinates and the detected position of the tracked device, whether the tracked device is located inside the boundary area or outside the boundary area; and

generating and transmitting an alert signal if the result of the determining step is different from an immediately previous result obtained.

2. The method of claim 1, wherein the boundary is a geo-fence boundary comprising a combination of circles and polygons.

3. The method of claim 1 wherein the alert signal is an exit alert if the result is that the tracked device is located outside the boundary area and the previous result is that the tracked device is located inside the boundary area.

4. The method of claim 1, wherein the alert signal is an entry alert if the result is that the tracked device is located inside the boundary area and the previous result is that the tracked device is located outside the boundary area.

5. The method of claim 4, wherein the set of coordinates include a hysteresis value that adds a predetermined area to the outer periphery of the boundary area once the tracked device is determined to be inside the boundary area.

6. The method of claim 5, wherein the generating and transmission of an alert signal will not occur until the location of the tracked device is determined to be outside the added predetermined area on the periphery of the boundary area.

7. A method for performing route progress analysis within a tracked device, comprising:

receiving, at the tracked device, a plurality of sets of coordinates associated with a plurality of boundary areas, wherein the plurality of sets of coordinates have a predetermined order; and

obtaining, at the tracked device, a position of the tracked device;

determining, based upon the predetermined order of the sets of coordinates and the detected position of the tracked device, whether the tracked device is progressing through the plurality of boundary areas in accordance with the predetermined order; and

generating and transmitting an alert signal if the tracked device is not progressing through the in accordance with the predetermined order.

8. The method of claim 7, wherein the boundary areas are geo-fence boundaries comprising a combination of circles and polygons.

9. The method of claim 7, wherein an alert is generated if, at the time of an initial determination of progress, the tracked device is not located in the first boundary area.

10. The method of claim 8, further comprising:

generating an alert message if the last geofence boundary in the predetermined order has been entered.

11. The method of claim 8, wherein the coordinates include a hysteresis value that adds a predetermined area to the outer periphery of the boundary area once the tracked device is determined to be inside the boundary area

12. A method of remotely tracking a tracked device, comprising:

receiving boundary information;

sending said boundary information to the tracked device;

receiving an alert from the tracked device regarding the location of the tracked device, wherein the boundary information includes coordinates that define geo-fence boundaries comprising a combination of circles and polygons.

13. A tracked device for performing location analysis, comprising:
means for receiving a set of coordinates associated with a boundary area; and
means for obtaining a position of the tracked device and storing the position;
means for determining, based upon the received coordinates and a detected position, whether the tracked device is located inside the boundary area or outside the boundary area; and
means for generating and transmitting an alert signal if the result is different from an immediately previous result obtained.

14. The method of claim 13, wherein the boundary is a geo-fence boundary comprising a combination of circles and polygons.

15. The method of claim 13, wherein the alert signal is an exit alert if the result is that the tracked device located outside the boundary area and the previous result is that the tracked device is located inside the boundary area.

16. The method of claim 13, wherein the alert signal is an entry alert if the result is that the tracked device is located inside the boundary area and the previous result is that the tracked device is located outside the boundary area.

17. The method of claim 16, wherein the set of coordinates include a hysteresis value that adds a predetermined area to the outer periphery of the boundary area once the tracked device is determined to be inside the boundary area.

18. The method of claim 17, wherein the generating and transmission of an alert signal will not occur until the location of the tracked device is determined to be outside the added predetermined area on the periphery of the boundary area.

19. An apparatus for performing route progress analysis within a tracked device, comprising:

means for receiving, at the tracked device, a plurality of sets of coordinates associated with a plurality of boundary areas, wherein the plurality of sets of coordinates have a predetermined order; and

means for obtaining, at the tracked device, a position of the tracked device and storing the position in a database;

means for determining, based upon the predetermined order of the sets of coordinates and the detected position of the tracked device, whether the tracked device is progressing through the plurality of boundary areas in accordance with the predetermined order; and

means for generating and transmitting an alert signal if the tracked device is not progressing through the in accordance with the predetermined order.

20. The apparatus of claim 19, wherein the boundary areas are geo-fence boundaries comprising a combination of circles and polygons.

21. The apparatus of claim 20, wherein an alert is generated if, at the time of an initial determination of progress, the tracked device is not located in the first boundary area.

22. The apparatus of claim 20, further comprising:

means for generating an alert message if the last geofence boundary in the predetermined order has been entered.

23. The apparatus of claim 19, wherein the coordinates include a hysteresis value that adds a predetermined area to the outer periphery of the boundary area once the tracked device is determined to be inside the boundary area

24. An apparatus for remotely tracking a tracked device, comprising:

means for receiving boundary information;

means for sending said boundary information to a tracked device;

means for receiving an alert from the tracked device regarding the location of the tracked device, wherein the boundary information includes coordinates that define geo-fence boundaries comprising a combination of circles and polygons.